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Tree Pest Leaflets

THE ELM LEAF BEETLE

Galerucella xanthomelaena (Schrank)

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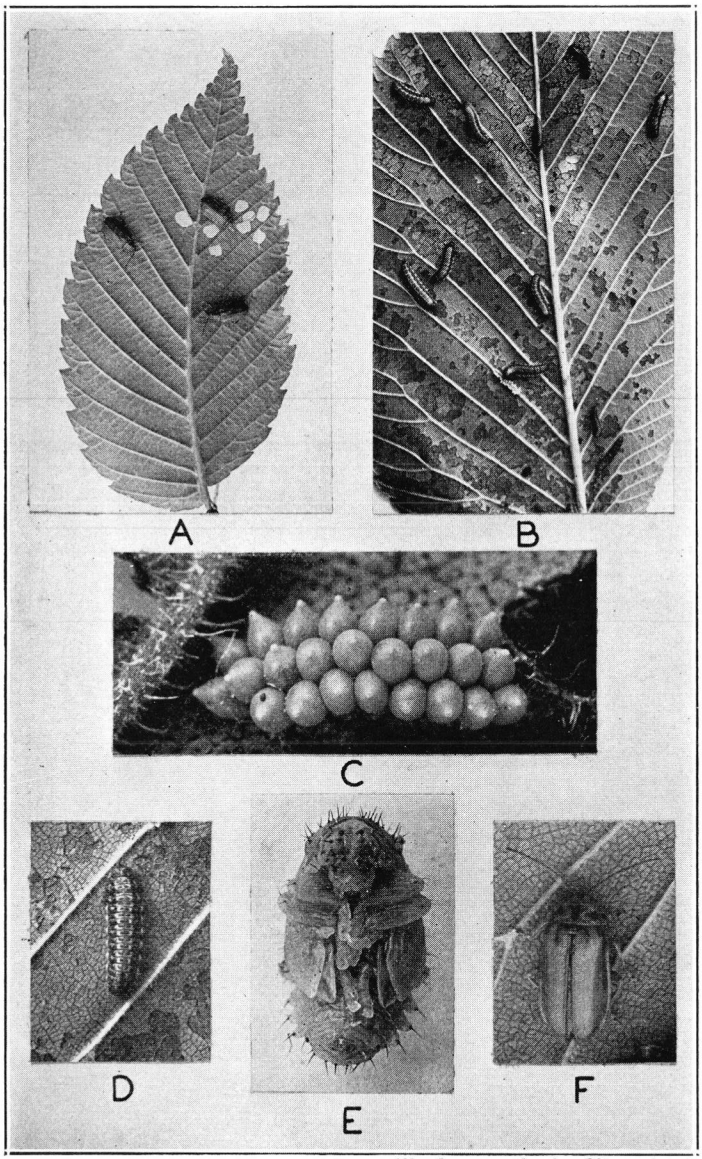

All photographs by Slingerland.

A—Elm leaf, with adults and typical injury. B—Elm leaf, with larvae and typical larval injury. C—Egg mass on elm leaf. D—Larva. E—Pupa. F—Adult.

THE ELM LEAF BEETLE

Galerucella xanthomelaena (Schrank)

History and Distribution: This insect is of European origin, and was first found in the United States near Baltimore, Maryland, in 1838. It is now generally distributed over the greater part of the United States, (having been recorded from California in 1924).

Host Trees: Probably any species of elms, preferring the European species, but causing serious damage to American, or white, elm (*Ulmus americana*).

Symptoms and Damage: The occurrence of small circular or elliptical holes in the leaves (Figure A), appearing soon after the expanding of the leaves, is indicative of the presence of the adults. During June the presence of skeletonized leaves (Figure B) indicates presence of larvae, which should be found easily on undersides of leaves. Badly injured trees may have foliage entirely skeletonized, and appear scorched.

Cause: The adult (Figure F) is a beetle about ¼ inch long, yellow to olive green in color, with a black stripe, sometimes indistinct, along the outer margin of each wing cover. Legs and antennae are yellow.

Eggs (Figure C) are deposited in groups of 5 to 25 on the undersides of leaves. They are somewhat bottle-shaped, with the broadly rounded base attached to the leaf, and are yellowish-orange in color.

The larvae (Figure D) are six-legged grubs, about ½ inch long when full grown, dull yellow in color, with two longitudinal black stripes down the back. The head, legs and tubercles are black. Newly hatched larvae are black.

The pupae (Figure E) are about ¼ inch long, and golden-yellow in color.

Life History: The insect winters in the adult, or beetle, stage in any dry, sheltered situation. It is frequently found in attics and sheds during the winter season. Beetles appear on the trees at the time the leaves unfold, and feed. Starting in late May or early June, they lay their eggs over a period of several weeks, each female laying from 400 to 800 eggs. The eggs hatch in about a week, and the larvae feed on the surface of the underside of the leaf for a period of 2 to 3 or more weeks. Upon becoming full grown the larvae desert the leaves, and pupate in crevices in the bark on larger limbs and trunk, or at the base of the tree. In about 10 days the adult beetles emerge, and may lay eggs for a second generation. In the northeastern section of the United States there may be from one complete, to two complete and a partial third generation, depending on locality and yearly variation in climate. The first generation usually does the most damage, however.

Means and Rate of Spread: The adult beetles fly readily, and spread rapidly by this means. (Due to the effects of natural agencies, such as climate

and natural enemies, they are not usually present in injurious numbers in any one locality over a long period of years, but fluctuate in abundance).

Control: (a) Under extensive forest conditions. The elm leaf beetle is not a serious forest pest.

(b) Individual shade trees.

The standard, and highly satisfactory control for this insect is to spray the infested trees thoroughly with arsenate of lead, at the rate of 3 to 5 pounds of powder, depending on the severity of the infestation, to 100 gallons of water.

In the case of a severe infestation, where the feeding of over-wintered beetles is so general as to cause serious damage, spray as soon as the leaves are ¾ expanded. This application will also control canker worms, if present. If this spray does not clean up the infestation, a second application about three weeks later, at the time the eggs are beginning to hatch, is advisable.

In the absence of canker worms, together with a slight or moderate infestation, a single application at the time the eggs are beginning to hatch is usually sufficient.

While the second generation is usually not serious, in certain cases it may be advisable to spray during early August at the time the eggs of the second generation are hatching.

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